

CLAIMS:

What is claimed is:

1. A method comprising:

transmitting a first broadcast message in a broadcast channel at a first specific time within a first assigned slot of a predetermined frame from a first base station of a radio communications system, the first broadcast message including a broadcast information sequence;

transmitting a second broadcast message in the broadcast channel at a second specific time within a second assigned slot of the predetermined frame from a second base station of the radio communications system, the second broadcast message including a broadcast information sequence; and

receiving a message from a user terminal having a timing relationship with the predetermined frame; and

determining the base station to which the message is directed based on the timing relationship.

2. The method of Claim 1, further comprising transmitting broadcast

messages in the broadcast channel at further specific times within further assigned slots of a predetermined frame from further base stations of the radio communications system, the further broadcast messages including a broadcast information sequence.

3. The method of Claim 1, wherein the predetermined frame is a repeating frame.

4. The method of Claim 1, wherein the specific transmission times are determined based on a common timing reference received by each base station.

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1 5. The method of Claim 4, wherein the common timing reference is a
2 satellite clock transmission received by a satellite receiver at each base station.

1 6. The method of Claim 1, wherein the broadcast information sequence
2 includes a code to identify the base station.

1 7. The method of Claim 6, wherein the code to identify the base station
2 comprises a base station color code.

1 8. The method of Claim 1, wherein the broadcast information sequence
2 includes a power sequence that is related to the power used to transmit the broadcast
3 message.

1 9. The method of Claim 1, wherein the broadcast information sequence
2 includes a load sequence that is related to the current traffic load at the base station.

1 10. A method comprising:
2 receiving a first broadcast message in a broadcast channel at a first specific time
3 within a first assigned slot of a predetermined frame from a first base station of a radio
4 communications system, the first broadcast message including a broadcast information
5 sequence;
6 receiving a second broadcast message in the broadcast channel at a second
7 specific time within a second assigned slot of the predetermined frame from a second
8 base station of the radio communications system, the second broadcast message including
9 a broadcast information sequence; and

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10 transmitting a message from a user terminal having a timing relationship with the
11 predetermined frame, the timing relationship indicating the base station to which the
12 message is directed.

1 11. The method of Claim 10, further comprising receiving broadcast messages
2 in the broadcast channel at further specific times within further assigned slots of a
3 predetermined frame from further base stations of the radio communications system, the
4 further broadcast messages including a broadcast information sequence.

1 12. The method of Claim 10, wherein the predetermined frame is a repeating
2 frame.

1 13. The method of Claim 10, wherein the specific transmission times are
2 determined based on a common timing reference received by each base station.

1 14. The method of Claim 13, wherein the common timing reference is a
2 satellite clock transmission received by a satellite receiver at each base station.

1 15. The method of Claim 10, wherein the broadcast information sequence
2 includes a code to identify the base station.

1 16. The method of Claim 15, wherein the code to identify the base station
2 comprises a base station color code.

1 17. The method of Claim 10, wherein the broadcast information sequence
2 includes a power sequence that is related to the power used to transmit the broadcast
3 message.

1 18. The method of Claim 10, wherein the broadcast information sequence
2 includes a load sequence that is related to the current traffic load at the base station.

1 19. A machine-readable medium having stored thereon data representing
2 sequences of instructions which, when executed by a machine, cause the machine to
3 perform operations comprising:

4 transmitting a first broadcast message in a broadcast channel at a first specific
5 time within a first assigned slot of a predetermined frame from a first base station of a
6 radio communications system, the first broadcast message including a broadcast
7 information sequence;

8 transmitting a second broadcast message in the broadcast channel at a second
9 specific time within a second assigned slot of the predetermined frame from a second
10 base station of the radio communications system, the second broadcast message including
11 a broadcast information sequence; and

12 receiving a message from a user terminal having a timing relationship with the
13 predetermined frame; and

14 determining the base station to which the message is directed based on the timing
15 relationship.

1 20. The medium of Claim 19, the instructions causing the machine to perform
2 further operations comprising transmitting broadcast messages in the broadcast channel at
3 further specific times within further assigned slots of a predetermined frame from further
4 base stations of the radio communications system, the further broadcast messages
5 including a broadcast information sequence.

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1 21. The medium of Claim 19, wherein the specific transmission times are
2 determined based on a common timing reference received by each base station.

1 22. The medium of Claim 19, wherein the broadcast information sequence
2 includes a code to identify the base station.

1 23. The medium of Claim 19, wherein the broadcast information sequence
2 includes a power sequence that is related to the power used to transmit the broadcast
3 message.

1 24. The medium of Claim 19, wherein the broadcast information sequence
2 includes a load sequence that is related to the current traffic load at the base station.

1 25. A machine-readable medium having stored thereon data representing
2 sequences of instructions which, when executed by a machine, cause the machine to
3 perform operations comprising:

4 receiving a first broadcast message in a broadcast channel at a first specific time
5 within a first assigned slot of a predetermined frame from a first base station of a radio
6 communications system, the first broadcast message including a broadcast information
7 sequence;

8 receiving a second broadcast message in the broadcast channel at a second
9 specific time within a second assigned slot of the predetermined frame from a second
10 base station of the radio communications system, the second broadcast message including
11 a broadcast information sequence; and

12 transmitting a message from a user terminal having a timing relationship with the
13 predetermined frame, the timing relationship indicating the base station to which the
14 message is directed.

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1 26. The medium of Claim 25, the instructions causing the machine to perform
2 further operations comprising transmitting broadcast messages in the broadcast channel at
3 further specific times within further assigned slots of a predetermined frame from further
4 base stations of the radio communications system, the further broadcast messages
5 including a broadcast information sequence.

1 27. The medium of Claim 25, wherein the broadcast information sequence
2 includes a code to identify the base station.

1 28. The medium of Claim 25, wherein the broadcast information sequence
2 includes a power sequence that is related to the power used to transmit the broadcast
3 message.

1 29. The medium of Claim 25, wherein the broadcast information sequence
2 includes a load sequence that is related to the current traffic load at the base station.

1 30. An apparatus comprising:
2 a first transmitter at a first base station of a radio communications system to
3 transmit a first broadcast message in a broadcast channel at a first specific time within a
4 first assigned slot of a predetermined frame, the first broadcast message including a
5 broadcast information sequence;
6 a second transmitter at a second base station of the radio communications system
7 to transmit a second broadcast message in the broadcast channel at a second specific time
8 within a second assigned slot of the predetermined frame, the second broadcast message
9 including a broadcast information sequence; and

10 a receiver at the first and second base stations, respectively to receive a message
11 from a user terminal, the message having a timing relationship with the predetermined
12 frame, indicating the base station to which the message is directed.

1 31. The apparatus of Claim 30, further comprising further transmitters of
2 further base stations of the radio communications system to transmit further broadcast
3 messages in the broadcast channel at further specific times within further assigned slots
4 of the predetermined frame, the further broadcast messages including a broadcast
5 information sequence.

1 32. The apparatus of Claim 30, wherein the first and the second base stations
2 further comprise a timing reference receiver to receive a timing reference common to the
3 first base station and the second base station.

1 33. The apparatus of Claim 30, wherein the broadcast information sequence
2 includes a code to identify the base station.

1 34. The apparatus of Claim 30, wherein the broadcast information sequence
2 includes a power sequence that is related to the power used to transmit the broadcast
3 message.

1 35. The apparatus of Claim 30, wherein the broadcast information sequence
2 includes a load sequence that is related to the current traffic load at the base station.

1 36. An apparatus comprising:
2 means for transmitting a first broadcast message in a broadcast channel at a first
3 specific time within a first assigned slot of a predetermined frame from a first base station
4 of a radio communications system, the first broadcast message including a broadcast

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information sequence;

means for transmitting a second broadcast message in the broadcast channel at a second specific time within a second assigned slot of the predetermined frame from a second base station of the radio communications system, the second broadcast message including a broadcast information sequence; and

means for receiving a message from a user terminal having a timing relationship with the predetermined frame; and

means for determining the base station to which the message is directed based on the timing relationship.

37. The apparatus of Claim 36, further comprising means for transmitting broadcast messages in the broadcast channel at further specific times within further assigned slots of a predetermined frame from further base stations of the radio communications system, the further broadcast messages including a broadcast information sequence.

38. The apparatus of Claim 36, means for receiving a common timing reference and means for determining the specific transmission times based on the common timing reference.

39. The apparatus of Claim 36, wherein the broadcast information sequence includes a code to identify the base station.

40. The apparatus of Claim 36, wherein the code to identify the base station comprises a base station color code.

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1 41. The apparatus of Claim 36, wherein the broadcast information sequence
2 includes a power sequence that is related to the power used to transmit the broadcast
3 message.

1 42. The apparatus of Claim 36, wherein the broadcast information sequence
2 includes a load sequence that is related to the current traffic load at the base station.

1 43. A broadcast channel in a radio communications system, the channel
2 comprising:
3 a repeating frame shared by a plurality of base stations, the frame having a
4 plurality of slots, each base station being assigned to a slot;
5 a predetermined timing assigned to each slot, so that each slot of the frame is
6 synchronized at all base stations;
7 a broadcast burst message for each base station, for transmission in the respective
8 assigned slot, the burst message having a broadcast information sequence; and
9 an uplink request channel having a plurality of slots to allow a user
10 terminal to request a traffic channel, each slot of the uplink request channel having a
11 timing relationship with the slots of the repeating frame so that the timing relationship
12 indicates the base station to which the traffic channel request is directed.

1 44. The channel of Claim 43, wherein the broadcast information sequence
2 includes a code to identify the transmitting base station.

1 45. The channel of Claim 43, wherein the predetermined timing is based on a
2 common timing reference received by each base station.

1 46. The channel of Claim 45, wherein the common timing reference is a
2 satellite clock transmission received in a satellite receiver at each base station.

1 47. The channel of Claim 43, further comprising a frequency hopping
2 sequence.

1 48. A method for accessing a wireless network, comprising:
2 receiving a plurality of timing sequences on a broadcast channel, each timing
3 sequence being received from a different one of a plurality of base stations;
4 determining network timing using the received timing sequences;
5 selecting one from among the plurality of base stations using the received timing
6 sequences;
7 transmitting a message indicating the base station selection, the message having a
8 timing relationship with a selected one of the timing sequences wherein the timing
9 relationship indicates the base station to which the message is directed.

1 49. The method of Claim 48, wherein the timing sequences are received with
2 at least one frequency and wherein the method further comprises using the received
3 timing sequences to determine a base station selection message frequency based on the
4 frequency of the received timing sequences.

1 50. The method of Claim 48, wherein the message is transmitted
2 omnidirectionally.

1 51. The method of Claim 48, wherein the timing sequences are synchronized
2 based on a common timing reference received by each base station.

1 52. The method of Claim 51, wherein the common timing reference is a
2 satellite clock transmission received in a satellite receiver at each base station.

1 53. The method of Claim 48, further comprising receiving base station
2 identifiers on the broadcast channel, the base station identifiers each being associated
3 with a respective timing sequence and using the base station identifiers to distinguish
4 broadcasts from different base stations on the broadcast channel.

1 54. The method of Claim 53, wherein transmitting a base station selection
2 message further comprises transmitting a base station identifier.

1 55. The method of Claim 48, wherein transmitting a base station selection
2 message further comprises transmitting an identifier of the transmitter.

1 56. A machine-readable medium having stored thereon data representing
2 sequences of instructions which, when executed by a machine, cause the machine to
3 perform operations comprising:
4 receiving a plurality of timing sequences on a broadcast channel, each timing
5 sequence being received from a different one of a plurality of base stations;
6 determining network timing using the received timing sequences;
7 selecting one from among the plurality of base stations using the received timing
8 sequences;
9 transmitting a message indicating the base station selection, the message having a
10 timing relationship with a selected one of the timing sequences wherein the timing
11 relationship indicates the base station to which the message is directed.

1 57. The medium of Claim 56, wherein the timing sequences are received with
2 at least one frequency, the instructions further causing the machine to perform operations
3 comprising using the received timing sequences to determine a base station selection
4 message frequency based on the frequency of the received timing sequences.

1 58. The medium of Claim 56, the instructions causing the machine to perform
2 further operations comprising synchronizing the timing sequences based on a common
3 timing reference received by each base station.

1 59. The medium of Claim 56, the instructions causing the machine to perform
2 further operations comprising receiving base station identifiers on the broadcast channel,
3 the base station identifiers each being associated with a respective timing sequence and
4 using the base station identifiers to distinguish broadcasts from different base stations on
5 the broadcast channel.

1 60. The medium of Claim 56, wherein transmitting a base station selection
2 message further comprises transmitting a base station identifier.

1 61. The medium of Claim 56, wherein the instructions for transmitting a base
2 station selection message further comprise instructions causing the machine to perform
3 operations comprising transmitting an identifier of the transmitter.